<center>REMARKS</center>

Reconsideration of the present application is respectfully requested. Claims 1, 6, 8-10, 12, and 16 have been amended. Claims 4, 7, and 13-15 have been canceled. Claims 22-26 have been newly added. No new matter has been added. **Applicants hereby respectfully request a telephone interview with the Examiner to be held before the Examiner's issuance of an office action in response to this RCE.**

Claim Rejections - §103(a)

Claims 1-3, 5-6, 8-14 and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication 2002/0056126 of Srikantan et al. (hereinafter "Srikantan").

Applicants' invention generally relates to a technique of reducing bursts in streaming media data traffic, in order to reduce congestion of downstream routers, servers, etc., particularly when a large number of clients have requested the same media data stream at substantially the same time. Such congestion can result in degradation in the quality and smoothness of the data streams that are ultimately delivered to the clients.

In particular embodiments of the present invention, congestion in downstream nodes is reduced by reducing streaming media burst traffic, and more specifically, by adding to each packet's specified delivery time a delay value that has been pseudo-randomly selected for each client. This technique virtually ensures that even if a large number of clients (e.g., 10,000 or more) request the same data stream at the same

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time, there will not be a large number of clients assigned the exact same delivery time

for a given data packet. This technique, therefore, has the effect of spreading the

delivery times of a given data packet for multiple clients substantially evenly throughout

a given time window, thereby reducing burst traffic. With the above remarks in mind,

attention is directed to independent claim 1.

Claim 1, as currently amended, recites:

1.   A method for reducing magnitudes of output traffic bursts in a streaming
media cache, comprising:
        receiving a request from a first client system for a stream of media data,
the stream of media data including a first streaming media data packet;
        receiving a request from a second client system for the stream of media
data;
        receiving the first streaming media data packet from an upstream server,
**the first streaming media data packet including a delivery time, at which the
first streaming media data packet is scheduled to be delivered to each of
the first and second client systems;**
        **pseudo-randomly selecting a first delay value and adding the first
delay value to the delivery time of the first streaming media data packet to
form a first modified delivery time for the first streaming media data packet;**
        **pseudo-randomly selecting a second delay value and adding the
second delay value to the delivery time of the first streaming media data
packet to form a second modified delivery time for the first streaming
media data packet;**
        modifying the first streaming media data packet with the first modified
delivery time to form a first modified first streaming media data packet;
        modifying the first streaming media data packet with the second modified
delivery time to form a second modified first streaming media data packet;
        outputting the first modified first streaming media data packet to the first
client system at the first modified delivery time; and
        outputting the second modified first streaming media data packet to the
second client system at the second modified delivery time.
(Emphasis added).

In contrast, Srikantan does not teach or suggest the above emphasized

limitations, namely <u>pseudo-randomly selecting a first delay value and adding the first</u>

<u>delay value to the delivery time of the first streaming media data packet to form a first</u>

<u>modified delivery time for the first streaming media data packet, and pseudo-randomly</u>

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selecting a second delay value and adding the second delay value to the delivery time of the first streaming media data packet to form a second modified delivery time for the first streaming media data packet (the first streaming media data packet is scheduled to be delivered to each of a first and second client systems at the delivery time).

The Examiner alleges that Srikantan's paragraph 26 teaches modifying a specified packet delivery time of a packet of data. Paragraph 26 states:

> Streaming real-time media places constraints upon the issuing server, because delivery of each frame or other unit of the media must be performed in a specified order and within a certain period of time. Thus, despite the number of clients it serves, a media streaming server must strive to meet the demands of streaming real-time media so that the quality of service to the users does not drop to an unacceptable level. For example, regardless of the type of program (i.e., live or pre-recorded) and mode of streaming (i.e., unicast or multicast), **streamed media is generally compressed to decrease the bandwidth that it consumes in transit, thus helping to ensure timely delivery of media to a client.**

Thus, as can be seen, paragraph 26 firstly points out a problem associated with steaming real-time media, namely, delivery of each frame or other unit of media by an issuing server must be performed in a specified order and within a certain period of time despite the number of clients the issuing server servers. Then paragraph 26 discloses a technique of compressing the streamed media to decrease the bandwidth to ensure timely delivery of media to a client. Paragraph 26, however, contains no discussion or indication of modifying a specified packet delivery time of a packet of data.

The Examiner acknowledges that Srikantan does not explicitly teach or suggest modifying the media data packet's delivery time for first and second client, respectively (Final Office Action mailed on 3/8/2007, page 3). The Examiner, however, alleges that Srikantan discloses media frames of a live or pre-recorded event from a single source being simultaneously streamed in a real-time to multiple users in a specified order within

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a certain period of time. The Examiner further alleges that time delay techniques are utilized in order to deliver the packets of a single live or pre-recorded transmission to multiple clients as described by Srikantan. In order to support the above allegation, the Examiner cites Srikantan's paragraphs 25, 26, 55 and 56, and alleges that "different time indices" disclosed in Srikantan reads on the first and second delay values recited in claim 1. The Examiner then concludes that it would have been obvious to one with ordinary skill in the art to understand that the method disclosed in Srikantan involves modifying the media data packet's delivery time belonging to single media source in order to accommodate simultaneous real-time transmission to multiple clients.

As disclosed in Srikantan, a "time index" (or "time indices") is completely different from a delay value such as recited in claim 1. A time index in Srikantan is used for determining where a segment is located in a track or media file (see paragraph 3 and claim 17 of Srikantan). In other words, time index identifies and locates a media segment's time position in a track or media program (see Abstract). Thus, metadata regarding time indices is used in Srikantan to make sure a media track or file is streamed in the correct sequence with appropriate timing (see paragraph 3).

In addition, "delivery of each frame or other unit of the media must be performed in a specified order and within a certain period of time" (alleged by the Examiner and disclosed in Srikantan's paragraph 26) does not necessarily require time delay techniques to be used.

In the Response to Arguments section of the final office action mailed on 3/8/2007, the Examiner additionally argues that "Srikantan, on paragraphs 26, 55, 56 and Figure 4, discloses serving streams of media which is either live or pre-recorded

from one track to multiple clients and further states that the same media is streamed to each client, <u>but with different timing</u>." The Examiner interprets that serving streams of media to multiple clients but with different timing means streaming media from different time indices within a media track to different clients at any given time. Thus, the Examiner is essentially arguing that Srikantan teaches or suggests delaying the delivery of a packet to different client systems. As discussed above, time index is used to identify and locate a media segment in a track or media program. Therefore, streaming media from different time indices within a media track to different clients at any given time means streaming <u>different media segments</u> within a media track to different clients at any given time. Thus, according to the Examiner's above allegation and interpretation, paragraphs 26, 55, 56, and Figure 4 teach or suggest that a streaming server may, at any given time, stream different segments of the same media to different clients. As further explained in paragraphs 56-63 of Srikantan, the media streamed to different clients are pre-recorded media and the reason that different segments of the media are streamed to different clients at any given time is that <u>different clients requested the streaming of the same media at different time</u>. Thus, paragraphs 26, 55, 56, and Figure 4 contain no discussion or indication of any technique of delaying the delivery of a packet of data to different clients with differently calculated delay time, even the packet of data is scheduled to be delivered to each of the clients at the same delivery time.

Thus, at least for the foregoing reasons, Srikantan does not teach or suggest all of the limitations of claim 1. Therefore, claim 1 and all claims which depend on it are patentable over Srikantan.

Independent claims 9, 16, and 22 each includes limitations similar to those discussed above for claim 1. Therefore, claims 9, 16, 22 and all claims which depend on them are also patentable over Srikantan.

Conclusion

For the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly requested.

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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